LIONHEART

L20T-112

USER MANUAL

www.laney.co.uk

British Engineering from the
Black Country United Kingdom

Dear Player,

Thank you very much for purchasing your new Laney product and becoming part of the worldwide Laney family. Each and every Laney unit is designed and built with the utmost attention to care and detail, so I trust yours will give you many years of enjoyment.

Laney products have a heritage which stretches back to 1967 when I first began building valve amplifiers in my parent's garage.

Since then we have moved on from strength to strength developing an extensive range of guitar, bass, public address and keyboard amplification products along with a list of Laney endorsees that includes some of the world's most famous and respected musicians.

At the same time we believe we have not lost sight of the reason Laney was founded in the first place - a dedication to building great sounding amplification for working musicians.

Warm Regards,

Lyndon Laney CEO

The Dark Art: In an age where guitar players have developed an unhealthy fascination with pre-amp distortion, the fabled sound of a tube power amp being pushed hard has almost passed into history.

Until now that is!

LIONHEART

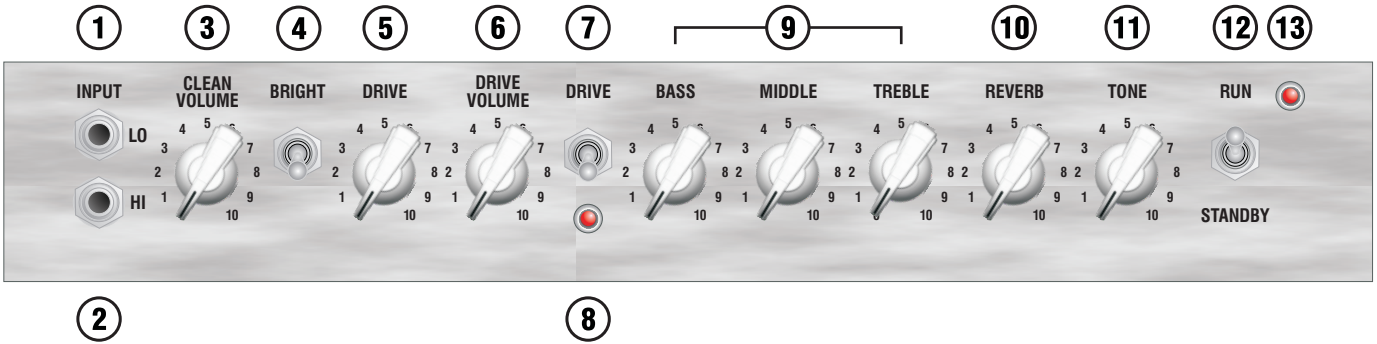
The 20W Class A Single Ended output stage installed in the L20T-112 oozes classic, warm tube tones: The harder you drive it, the better it sounds. Plus with enough gain for contemporary tones, it also has a mean, spiteful side to it as well – making it ideal for any style of playing. Perfect for stage and studio use.

Every Lionheart product is extensively play tested by experienced guitarists before being shipped to our customers. Only when the unit is finished to our complete satisfaction is it assigned its own unique build number which is then hand stamped onto the rear mounted plaque.

Your L20T should give you years of trouble-free amplification, however please take time to read this manual and familiarise yourself with the controls as it will allow you to get the best from your amplifier.

We hope you enjoy using your L20T as much as we enjoyed designing and making it.

Best wishes from all at Laney



1 **HI INPUT:** 'Hi' stands for high gain. This input is designed for the connection of low output level guitars making it well suited for guitars with single coiled or low gain humbucker type pickups. Use of high gain pickups in this input may drive the preamp too hard causing a "mushy" sound. Only use good quality guitar cable.

2 **LO INPUT:** 'Lo' stands for low gain. This input is attenuated down approximately 50% from the Hi input and is designed for high output level guitars. It is useful in obtaining output that is "tight" not "mushy" from high gain humbucker type pickups. Also use this input for the cleanest full range sound with extended low end response. Only use good quality guitar cable.

3 **CLEAN VOL:** Sets how loud the clean channel is. Try cranking it up a little to drive the power tubes harder for that real retro sound and feel that only a quality tube amplifier can deliver. Now use your guitar volume to control the amount of distortion. (Wind it up for distortion back it off a little for clean)

4 **BRIGHT:** Adds brightness and life to the treble frequencies of your guitar when on the clean channel. Adds edge and picking emphasis when on the drive channel. The switch has more effect at low Clean Volume/Drive control settings. Use in conjunction with the Treble and Tone controls for optimum performance. Switch up to enable.

5 **DRIVE:** Sets the level of tube preamplifier drive or how dirty your sound is. This control should be used in conjunction with the Drive Volume (6) Setting low levels of gain with high levels of volume will give a clean preamplifier sound with tube output stage overdrive. Setting a medium drive level and medium Drive Volume will give a nice crisp bluesy lead tone, again with the ability to drive the output stage at higher Drive Volume settings.

Setting a high level on the Drive control and a low setting on the Drive Volume will give you a punchy hard rock lead tone, with the ability to again drive the output tubes at higher Drive volume settings. Having set the Drive and Drive Volume controls to your desired sound try backing off your guitar volume and tone controls for lots of other cool sounds. Good tube amplifiers have the unique ability to produce a wide range of sounds by using only your guitar controls, playing weight and style.

6 **DRIVE VOL:** Sets how loud the 'Drive' channel is. It is useful to experiment with drive levels and drive volumes. If you want a very open, warm and semi overdriven sound try reducing the amount of drive and increasing the drive volume. This reduces pre-amp gain but pushes the power amp section and makes it work harder giving you a very desirable level of power amp distortion which is a very pleasing "retro" style sound.

7 **DRIVE SWITCH:** Switch up to enable the 'Drive' channel. (This switch must be in the down (OFF) position in order for the drive to be switched remotely via a foot switch.)

8 **DRIVE LED:** This led will illuminate when the Drive channel is activated with the Drive switch (8) or the included Laney FS2 remote footswitch.

9 **BASS, MIDDLE, TREBLE:** These are a traditional set of passive tone controls. Passive controls have the advantage of always sounding musical at any of their settings mainly due to their unique interactive nature. This gives players a more natural set of tools to create their ideal sound. (Try them all set at midway (5) as a good starting point)

10 **REVERB:** Controls how loud the built in reverb sounds.

11 **TONE:** The tone control works in a similar fashion to the Tone control you probably have on your guitar except that it uniquely works at the other end of the amplification chain. This has the ability to not only control the overall top end response but also reduce upper end harmonics on the output stage and preamplifier overdrive sounds. This will give you bright cutting sounds at high settings and smooth rounded sounds at lower settings. (Midway (5) is a good starting point)

12 **STANDBY SWITCH:** Disconnects the main HT voltage from the tubes but keeps the tubes warm so that they are ready to go instantly. Switch to standby for short breaks when you don't want to wait for the tubes to warm up again.

13 **POWER LED:** This led will be lit when the amplifier is switched on.
(Always switch off and disconnect the power cord when not in use)

1
3
4
5
6
7
8
2
POWER
1
0
MAXIMUM POWER CONSUMPTION
80 WATTS 50/60Hz
HT FUSE
T315mA L
SUPPLY VOLTAGE & FUSE RATING
T1.6A L 250V
T630mA L 250V
CAUTION: TO REDUCE THE RISK OF FIRE REPLACE FUSE WITH SAME TYPE AND RATING.
ATTENTION: POUR REDUIRE LE RISQUE DU FEU REMPLACEZ AVEC LE MEMES TYPE ET ESTIMATION.
WARNING: THIS APPARATUS MUST BE EARTHED.
AVERTISSEMENT: CET APPAREIL DOIT ETRE MIS A LA TERRE LAITE ON LIITETTÄVÄ.
SUOJAMAADOITUSKOSKETTIMILLA VARUSTETTUUN PISTORASIAAN APPARATET MÅ TILKOPLES JORDET STIKKONTAKT APPARATEN SKALL ANSLUTAS TILL JORDAT UTTAG.
WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE. DO NOT REMOVE COVER. NO USER SERVICABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONEL.
AVERTISSEMENT: POUR REDUIRE LE RISQUE DU FEU OU DE DECHARGE ÉLECTRIQUE N'EXPOSEZ PAS CET APPAREIL A LA PLUIE OU AU MOISTURE. DO POUR NE PAS ENLEVER LA COUVERTURE. AUCUNES PIECES DE L'UTILISATEUR SERVICEABLE A L'INTERIEUR. REFEREZ-VOUS L'ENTRETIEN AU SERVICE QUALIFIE PERSONEL.
MADE IN CHINA. FABRIQUE EN CHINE.
N15039
MODEL L20
SERIAL NO.
Laney
Power To The Music
www.laney.co.uk
DESIGNED AND ENGINEERED IN THE UK
CAUTION - RISK OF ELECTRIC SHOCK DO NOT OPEN
ATTENTION - LE RISQUE DE DECHARGE ELECTRIQUE NE S'OUVRENT PAS
LOUDSPEAKERS
REFER TO USER MANUAL
FOR RECOMMENDED CONNECTIONS
ONLY USE ONE IMPEDANCE SELECTION AT A TIME
4 Ω
8 Ω (INT. CABINET)
16 Ω
EFFECTS LOOP
DRIVE (TIP)
REVERB (RING)
RETURN
-10dB
0dB
BYPASS
SEND
FOOTSWITCH

1. **POWER INLET SOCKET:** Connect to your power source. Make sure the specified voltage is correct for your country!

2. **POWER FUSE:** This drawer contains the main safety fuse for the unit. The fuse protects the AC power to the amplifier. USE ONLY THE CORRECT SIZE AND RATING OF FUSE AS SPECIFIED ON THE PANEL. If a fuse blows or fails and a replacement of the same size and rating is installed and it in turn blows, the amplifier has suffered a malfunction internally and needs immediate service from a qualified technician. DO NOT TRY USING A FUSE OF HIGHER RATING. Using a fuse that is too large in current rating may cause serious, irreparable damage to the amplifier and presents a serious fire hazard. The mains fuse ratings are detailed in the specs section at the rear of this manual

3. **POWER:** Main power switch for unit.

4. **HT FUSE:** This fuse protects the DC power to the tubes within the amplifier. USE ONLY THE CORRECT SIZE AND RATING FUSE AS SPECIFIED ON THE PANEL. If a fuse blows or fails and a replacement of the same size and rating is installed and it in turn blows, the amplifier has suffered a malfunction, at this point check the output tubes and replace faulty ones if required. Should tubes not be the problem the amplifier should be checked out by a qualified technician. Do not try using a fuse of greater value. Using a fuse that is too large in current rating may cause serious, irreparable damage to the amplifier. Fuses are designed to protect, do not take chances.

5. **SERIAL NO:** Displays the model and serial number of the unit.

6. **EXTENSION CABINET:** If the onboard loudspeaker jack is removed, a 4-16 ohm cabinet can be connected directly to these sockets. Use only one impedance selection at once. Please note mismatched impedance will reduce the amplifiers performance and in some cases may cause damage to your amplifier.

⑦ **FX LOOP:**
FX RETURN: Mono jack socket for the connection of the output of an external FX unit. This can also be used as a slave in for the power amp. As the FX Loop is an insert type, this will mute the preamp signal.

FX LOOP SWITCH: Selects the FX Loop mode of operation:

- -10dBu - For connection of FX units with a -10dBu nominal output level. As this is intended for devices with a lower output level, this switch increases the gain of the FX Loop by 10dB.
- 0 dBu - For connection of FX units with a 0dBu nominal output level.
- Bypass - Removes the FX Loop from the signal path.

FX SEND: Mono jack socket for connection to the input of an external FX unit.

⑧ **FOOTSWITCH SOCKET:** Provided for the connection of the included Laney FS2 footswitch. This allows you to remotely switch between the clean/drive channel and switch the built in reverb On/Off.

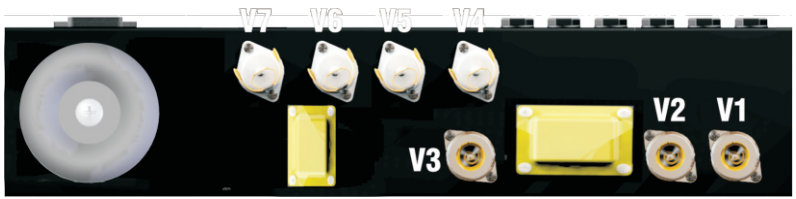
- **Tube amplifiers**; generally sound much warmer/sweeter than solid state transistor amplifiers but they also need a little more respect due to the fragile glass tubes themselves. The L20T-112 uses top quality tubes, which should give you years of trouble free service, however like all tube amps; it is important to treat it with a certain amount of care.
- **Tubes are fragile glass components;** they can easily be damaged if thrown in and out of vehicles,
- **Make sure the impedance;** of your cabinets matches the setting on your amplifier. Improper impedance matching will result in reduced output power output and compromised sound at best and amplifier failure/premature tube failure at worst.
- **Allow the amplifier;** to warm up to room temperature before switching it on, The sudden thermal shock generated can crack the cold glass tube housing plus any moisture is bad news around high voltage electronics.
- **Allow the amplifier;** to cool down after playing before moving. Hot tubes are more susceptible to damage than cool ones.Use good quality loudspeaker leads, cheap leads are often not up to the job of handling the large requirements for loudspeakers and can often short out.
- **Tube amplifiers**; don't like running into a open circuit. A tubes life expectancy is based upon a number of factors which include operating temperature, how hard and how often it is played, vibration due to travel etc. Tubes should be changed in your amplifier if you notice any change in your amplifiers performance etc. They need not be changed at any regular interval.
- **Typical problems;** with preamp tubes, can be a crackly noise, hiss, hum and microphony. The preamp tubes can safely be changed with no other action required if they fail or reduce in performance. Typical output tube problems can be blown HT fuse; sound lacking in punch, sound lacks extreme highs or lows and low level hum. The Output tubes can be replaced singularly if you replace them with the exact same type AND grade as factory fitted otherwise they should be replaced as a set. See the diagram following to see how to check the tube grade fitted. Exact replacement preamp tubes and matched sets of output tubes are available from Laney via your dealer.
- **To change a tube;** switch off the unit and unplug from the mains supply. Wait for the tubes to cool down. Lay amplifier down on its front face and remove the protective grille held in place with four screws. You should now be able to access the underside of the amplifier chassis. Preamp tubes are protected with a screen can, to remove; gently twist the screen can anti clockwise and then pull up. The tube can then be gently pulled out. Take care when pushing the new tube in to make sure the pins are all aligned properly. Output tubes have a spring retainer which must be pulled away before the tube will come out.
- **Amplifier connection;** In order to avoid damage, it is advisable to establish and follow a pattern for turning on and off your equipment. With all system parts connected, effects processors etc. **BEFORE** turning on your guitar amplifier. Many products have large transient surges at turn on and off which can cause damage to your speakers. By turning on your guitar amplifier **LAST** and making sure its Volume controls are set to minimum any transients from other equipment will not reach your loudspeakers.

Wait until all system parts have stabilised; usually a couple of seconds. Similarly when turning off your system always turn down the Volume controls on your guitar amplifier and then turn off its power before turning off other equipment.

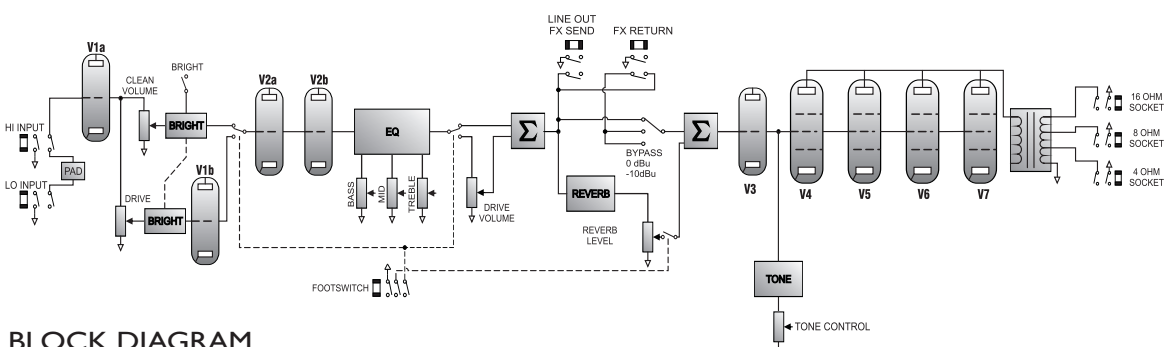
Cables: never use shielded or microphone cable for any speaker connections as this will not be substantial enough to handle the amplifier load and could cause damage to your amplifier system.

Caution: These professional loudspeaker systems are capable of generating very high sound pressure levels. Use care with placement and operation to avoid exposure to excessive levels that can cause permanent hearing damage. (Refer to guidelines on page 2)

Servicing: The user should not attempt to service these products. Refer all servicing to qualified service personnel.



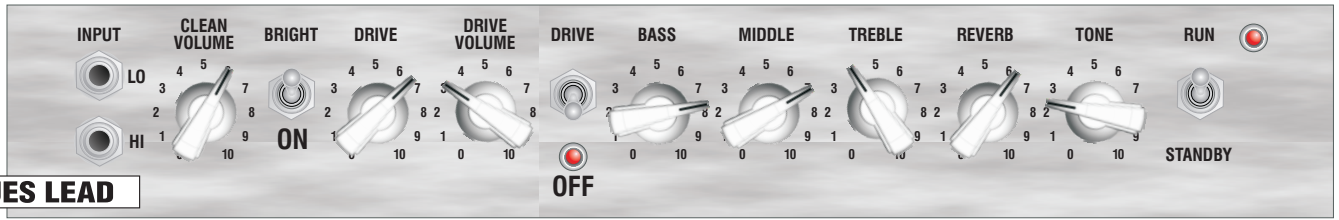
V1	ECC83	005570
V2	ECC83	005550
V3	ECC83	5571A
V4-V7	EL84STR x 4	005563



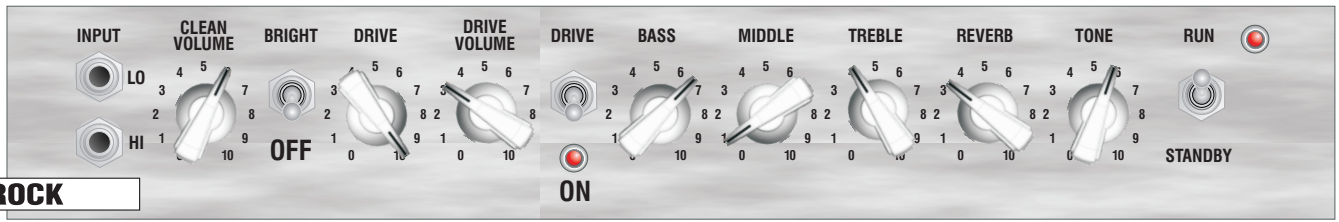
BLOCK DIAGRAM

CLEAN

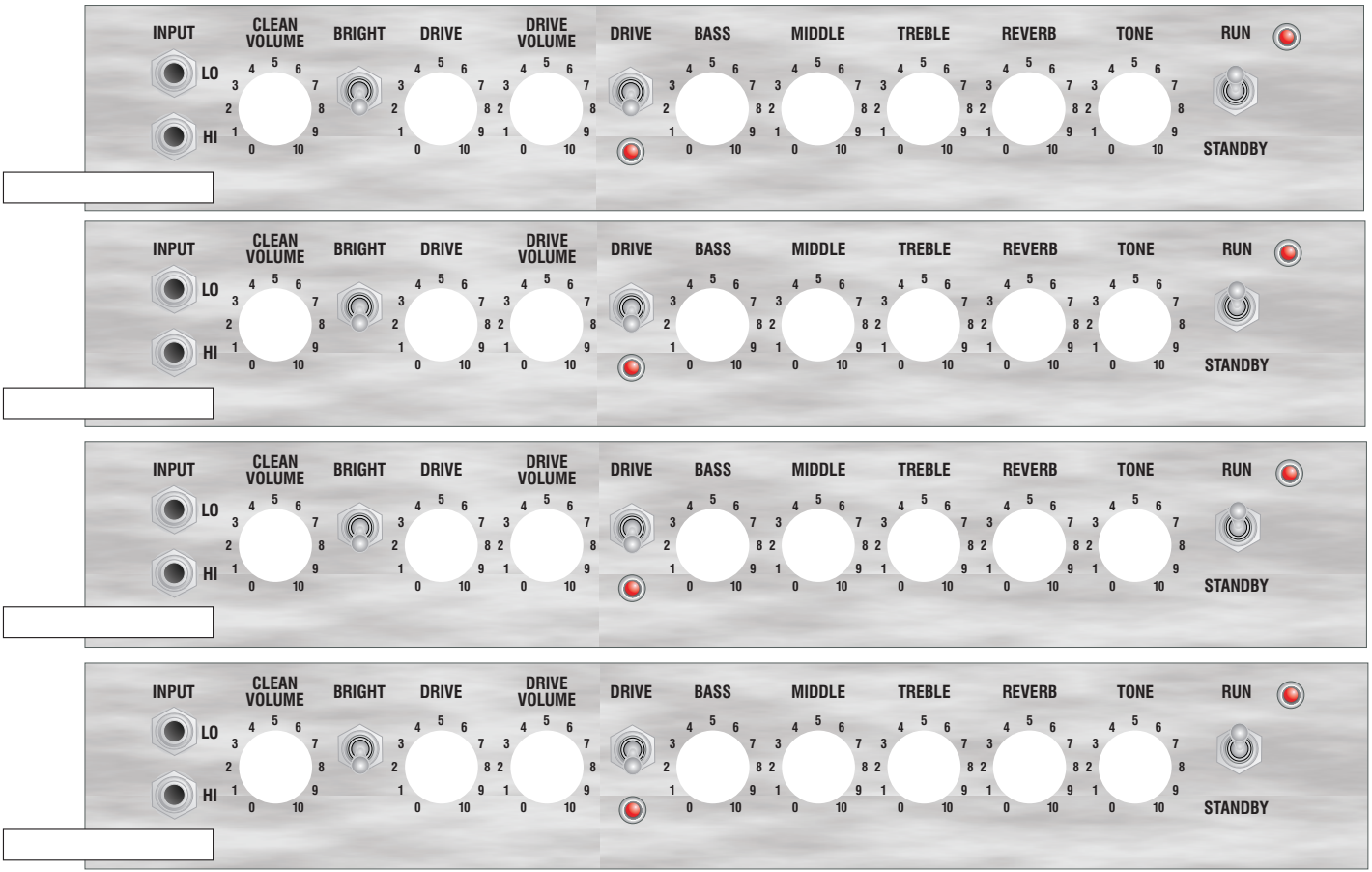
BLUES



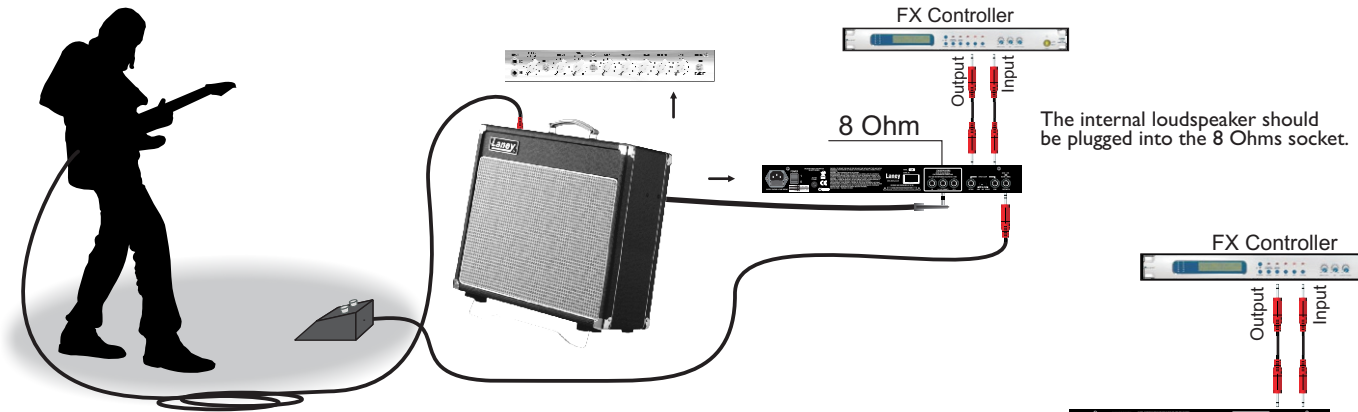
BLUES LEAD



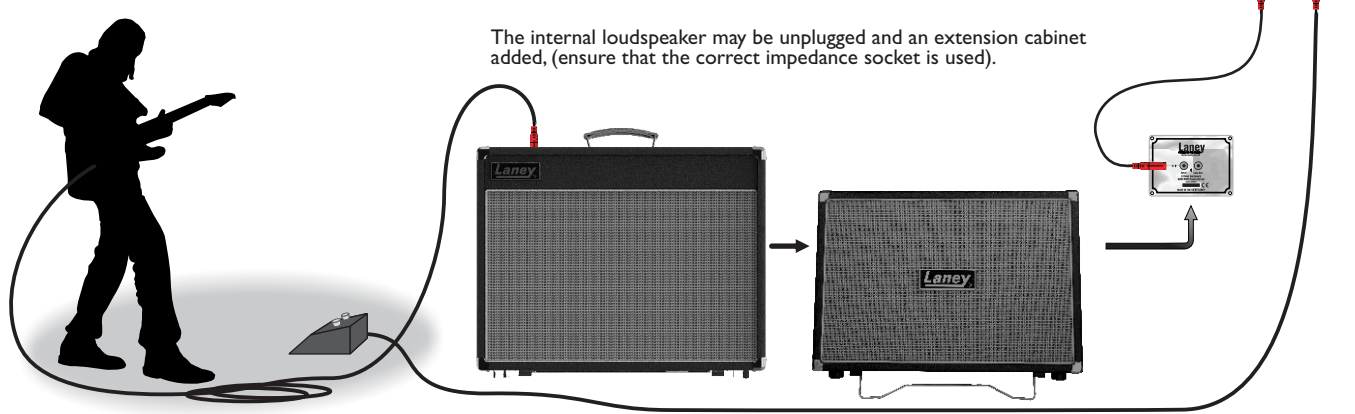
ROCK


INPUT
LO
HI
CLEAN VOLUME
BRIGHT
DRIVE
DRIVE VOLUME
DRIVE
BASS
MIDDLE
TREBLE
REVERB
TONE
RUN
STANDBY

L20T-112 CONNECTIONS WITH FX



L20T-112 WITH LT-212 EXTENSION CABINET & FX


The internal loudspeaker may be unplugged and an extension cabinet added, (ensure that the correct impedance socket is used).

Nominal supply voltage	~100V, ~120V, ~220V, ~240V. 50/60Hz Pre-set Factory Option
Mains Fuse	(~100, ~110>120V = T1.6A L 250V) (~220V>240V = T630mA L 250V)
HT Fuse	T315mA L 25V
Power Consumption	50W
Output Power Rating	20W
Loudspeaker	Celestion G12H 12" Driver (Minimum 8 Ohm Impedance)
Features	FX Loop: insert type, nominal 750mV level. Pure Parallel Single Ended Class A Valve tone. Oversized power supplies and output transformers for that big powerful sound and long term reliability. Sealed gold contact relays used in all signal switching for minimum effect to your sound. The best available specially selected tubes throughout, (4*EL84 Power Tubes, 3*ECC83/12AX7 Preamp Tubes). Reverb for that classic guitar sound. Birch plywood cabinet construction for optimum sound quality and road Unique Tilt Mechanism.
Footswitchable	FS2 For Clean/DriveChannel & Reverb ON/OFF
EQ	Passsive Bass, Middle and Treble, Tone Boost & Cut (active on top end of
Input Resistance	1M Ohm
L20T-112	21.5 Kg (Shipping Weight 23.5 Kg) Size (H*W*D) 507*562*253
L20T-212	31 Kg (Shipping Weight 33 Kg) Size (H*W*D) 543*750*359

CE

This product conforms to the requirements of the following European Regulations, Directives & Rules:
CE Mark (93/68/EEC), Low Voltage 2006/95/EC, EMC (2004/108/EEC),
RoHS (2011/65/EU), WEEE (2012/19/EU)

In order to reduce environmental damage, at the end of its useful life, this product must not be disposed of along with normal household waste to landfill sites. It must be taken to an approved recycling centre according to the recommendations of the WEEE (Waste Electrical and Electronic Equipment) directive applicable in your country.

In the interest of continued development, Laney reserves the right to amend product specification without prior notification.

IMPORTANT SAFETY INSTRUCTIONS

WARNING: When using electrical products, basic cautions should always be followed, including the following:

1. Read these instructions.
2. Keep these instructions safe.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any of the ventilation openings. Install in accordance with manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.
9. An apparatus with Class I construction shall be connected to a mains socket outlet with a protective connection. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point they exit from the apparatus.
11. Only use attachments/accessories provided by the manufacturer.
12. Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. The mains plug or appliance coupler is used as the disconnect device and shall remain readily operable. The user should allow easy access to any mains plug, mains coupler and mains switch used in conjunction with this unit thus making it readily operable. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Never break off the ground pin. Connect only to a power supply of the type marked on the unit adjacent to the power supply cord.
16. If this product is to be mounted in an equipment rack, rear support should be provided.
17. Note for UK only: If the colours of the wires in the mains lead of this unit do not correspond with the terminals in your plug, proceed as follows:
    a) The wire that is coloured green and yellow must be connected to the terminal that is marked by the letter E, the earth symbol, coloured green or coloured green and yellow.
    b) The wire that is coloured blue must be connected to the terminal that is marked with the letter N or the colour black.
    c) The wire that is coloured brown must be connected to the terminal that is marked with the letter L or the colour red.
18. This electrical apparatus should not be exposed to dripping or splashing and care should be taken not to place objects containing liquids, such as vases, upon the apparatus.
19. Exposure to extremely high noise levels may cause a permanent hearing loss. Individuals vary considerably in susceptibility to noise-induced hearing loss, but nearly everyone will lose some hearing if exposed to sufficiently intense noise for a sufficient time.

The U.S. Government's Occupational Safety and Health Administration (OSHA) has specified the following permissible noise level exposures: According to OSHA, any exposure in excess of the above permissible limits could result in some hearing loss. Earplugs or protectors to the ear canals or over the ears must be worn when operating this amplification system in order to prevent a permanent hearing loss, if exposure is in excess of the limits as set forth above. To ensure against potentially dangerous exposure to high sound pressure levels, it is recommended that all persons exposed to equipment capable of producing high sound pressure levels such as this amplification system be protected by hearing protectors while this unit is in operation.

Duration Per Day in Hours	Sound Level dBA, slow response
8	90
6	92
4	95
3	97
2	100
1 ½	102
1	105
½	110
¼ or less	115

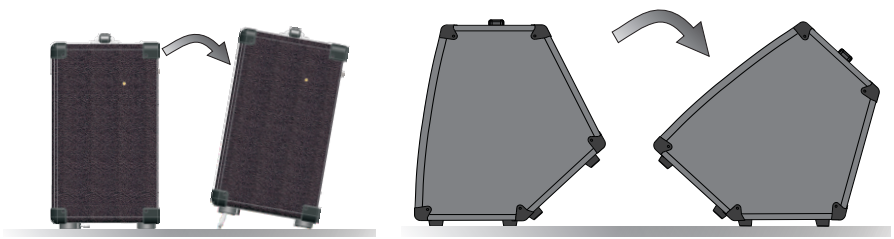
Intended to alert the user to the presence of high 'Dangerous Voltage' within the products enclosure that may be sufficient to constitute a risk of electrical shock to persons.

Intended to alert the user of the presence of important operating and maintenance (Servicing) instructions in the literature accompanying the product.

CAUTION: Risk of electrical shock - DO NOT OPEN. To reduce the risk of electrical shock, do not remove the cover. No user serviceable parts inside. Refer servicing to qualified personnel.

WARNING: To prevent electrical shock or fire hazard, do not expose this appliance to rain or moisture. Before using this appliance please read the operating instructions.

If your appliance features a tilting mechanism or a kickback style cabinet, please use this design feature with caution. Due to the ease with which the amplifier can be moved between straight and tilted back positions, only use the amplifier on a level, stable surface. DO NOT operate the amplifier on a desk, table, shelf or otherwise unsuitable nonstable platform.



After unpacking your amplifier check that it is factory fitted with a three pin 'grounded' (or earthed) plug. Before plugging into the power supply ensure you are connecting to a grounded earth outlet.

If you should wish to change the factory fitted plug yourself, ensure that the wiring convention applicable to the country where the amplifier is to be used is strictly conformed to. As an example in the United Kingdom the cable colour code for connections are as follows.

EARTH or GROUND GREEN/YELLOW
NEUTRAL - BLUE
LIVE - BROWN

NOTE

This manual has been written for easy access of information. The front and rear panels are graphically illustrated, with each control and feature numbered. For a description of the function of each control feature, simply check the number with the explanations adjacent to each panel.

Your Laney amplifier has undergone a thorough two stage, pre-delivery inspection, involving actual play testing.

When you first receive your Laney amplifier, follow these simple procedures:

(i) Ensure that the amplifier is the correct voltage for the country it is to be used in.

(ii) Connect your equipment with a high quality shielded cable. You have probably spent considerable money on your amplifier and equipment - don't use poor quality cable, it won't do your gear justice.

Please retain your original carton and packaging so in the unlikely event that some time in the future your amplifier should require servicing you will be able to return it to your dealer securely packed.

Care of your Laney amplifier will prolong it's life.....and yours!